

**Harvard Medical School Department of  
Continuing Education and the Cardiovascular  
Division of the Department of Medicine,  
Brigham and Women's Hospital**



***Cardiology Rounds***  
**August/September 2006**

**The Role of Arterial Stiffness in the Pathogenesis of  
Hypertension and Cardiovascular Disease**

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**Objectives:**

This issue of *Cardiology Rounds*:

- reviews the factors associated with increased arterial stiffness during aging
- discusses the major changes contributing to elevated pulse pressure during aging
- presents data indicating that the prior paradigm of increased reflected wave amplitude and augmentation index contributing to elevated pulse pressure, is less valid than previously thought
- presents an alternative view that – an increase in forward wave amplitude due to increased aortic stiffness – may explain most of the increase in central and peripheral pulse pressure observed with advancing age
- describes potential ways to modify aortic stiffness.

**Questions:**

1. Elevated brachial pulse pressure in the elderly is primarily attributable to increased amplitude and premature return of the reflected pressure wave.  
True  False
2. Changes in reflected wave timing are an unlikely explanation for the aging related increase in pulse pressure.  
True  False
3. Augmentation index is an excellent indicator of aortic stiffness in the elderly.  
True  False
4. Beyond 60 years of age, which of the following does **not** occur:
  - a. Augmentation index increases dramatically
  - b. Pulse pressure increases
  - c. Carotid-femoral PWV increases
  - d. Forward wave amplitude increases
  - e. None of the above

5. Elevated pulse pressure is associated with:
- a. Cognitive impairment
  - b. Stroke
  - c. Heart failure
  - d. Kidney disease
  - e. All of the above
6. Which of the following lifestyle interventions does **not** reduce arterial stiffness:
- a. Weight loss
  - b. Reduced salt intake
  - c. Aerobic exercise
  - d. Weight lifting
  - e. None of the above
7. Which of the following antihypertensive drugs are most effective at reducing direct measures of arterial stiffness:
- a. ACE inhibitors and angiotensin receptor blockers
  - b. Beta-blockers
  - c. Calcium channel blockers
  - d. Diuretics
  - e. A and D.

To receive AMA category 1 credit, you must correctly answer 60% of the test questions.

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Please keep a copy of your test before submission. A certificate will be sent upon successful completion of the test, along with the answer key, after the deadline date, as indicated.

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